

Notice of Allowability

Application No.

10/647,965

Examiner

Thinh T. Nguyen

Applicant(s)

RATHFELDER ET AL.

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/4/2005.
2. ☒ The allowed claim(s) is/are 1-33.
3. ☒ The drawings filed on 26 August 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

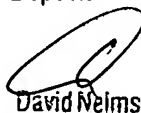
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____



David Neims

Supervisory Patent Examiner
Technology Center 2800

DETAILED ACTION

1. In response to Applicant's communication on April 4th 2005 ; The restriction requirement by the Office Action issued on 3/8/2005 is withdrawn.

Specification.

2. The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant cooperation is requested in correcting any errors of which the applicant may become aware in the specification.

Reason for allowance

3. Claims 1-33 are allowed. The following is an examiner's statement of reason for allowance:

I/ Group I: Claims 1-8:

None of the references of record teaches or suggests the claimed **EEPROM DEVICE AND METHOD FOR PROVIDING LOWER PROGRAMMING VOLTAGE** having the limitations:

-- "a drawing layer comprising at least one serrated element configured underneath the tunneling region, the at least one serrated element configured to provide a restriction of oxygen used to grow gate oxide for determining programming voltage of the EEPROM device. "--

and all other limitations as recited in claim 1

II/ Group II: Claims 9-15:

None of the references of record teaches or suggests the claimed **EEPROM DEVICE AND METHOD FOR PROVIDING LOWER PROGRAMMING VOLTAGE** having the limitations:

-- "a drawing layer comprising at least one serrated element configured underneath the tunneling region to restrict growth of gate oxide, thus lowering a required programming voltage of the EEPROM device. "--

and all other limitations as recited in claim 9

III/ Group III: Claims 16-20:

None of the references of record teaches or suggests the claimed **EEPROM DEVICE AND METHOD FOR PROVIDING LOWER PROGRAMMING VOLTAGE** having the limitations:

-- "modifying a mask drawing layer with at least one serrated element configured underneath a tunneling region of the EEPROM device; "--

and all other limitations as recited in claim 16.

IV/ Group IV: Claims 21-28:

None of the references of record teaches or suggests the claimed **EEPROM DEVICE AND METHOD FOR PROVIDING LOWER PROGRAMMING VOLTAGE** having the limitations:

-- "at least one serrated element configured underneath the tunneling region, the at least one serrated element configured to restrict growth of gate oxide to reduce requirements for programming voltage of the EEPROM device. "--

and all other limitations as recited in claim 21.

V/ Group V: Claims 29-32:

None of the references of record teaches or suggests the claimed **EEPROM DEVICE AND METHOD FOR PROVIDING LOWER PROGRAMMING VOLTAGE** having the limitations:

-- "at least one serrated element configured underneath the tunneling region to restrict growth of gate oxide, thus lowering a required programming voltage of the EEPROM device. "--

and all other limitations as recited in claim 29.

VI/ Group VI: Claims 33:

None of the references of record teaches or suggests the claimed **EEPROM DEVICE AND METHOD FOR PROVIDING LOWER PROGRAMMING VOLTAGE** having the limitations:

-- "at least one serrated element configured underneath the tunneling region, to provide a restriction of oxygen. "--

and all other limitations as recited in claim 33.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Yamashita (US patent 5,668,754) discloses a ferroelectric memory cell and reading and writing method thereof.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thinh T Nguyen whose telephone number is 571-272-1790.

The examiner can normally be reached on Monday-Friday 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached at 571-272-1787. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9319 for After Final communications.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval [PAIR] system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thinh T Nguyen

TTN

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David Nelms
Supervisory Patent Examiner
Technology Center 2800